

Table of Contents

Preface

Chapter 1: Properties and Processing of Structural Metals

Effect of Thickness Hardened SKD 11 Modified Steel on the 7.62 mm Ballistic Performance A.F.H. Mukhammad, R. Rusnaldy, R. Ismail and T.W.B. Riyadi	3
Single-Bead Microstructures of an AlCrFeCoNi High Entropy Alloy Processed by the Laser Directed Energy Deposition K.A. Ilman, Y. Yamashita and T. Kunimine	13
Effect of Shielded Metal Arc Welding on Microstructure, Hardness, and Tensile Strength of Nodular Cast Iron A.S. Darmawan, A.D. Anggono, A. Yulianto, B.W. Febriantoko, M. Masyrukan, T.L. Ginta and A. Hamid	21
Characterization of Gray Cast Iron with the Addition of 3 Wt.% FeMn in the Casting Process with Metal Molds and Sand Molds A. Yulianto, A.S. Darmawan, A.C. Mustika, B.W. Febriantoko and P. Partono	27

Chapter 2: Polymers and Composites

Effect of Ribbed Smoked Sheet/Ethylene Propylene Diene Monomer Ratio on Mechanical Properties of Compounds for Pneumatic Fender Applications R. Fidyarningsih, S. Husin, H. Susanto, I. Idvan, I. Indriasari, A.S. Hidayat, M. Anggaravidya, D.K. Arti, W.T. Utami, G. Taqwatomo, L.A. Wisojodharmo, A. Amry, D.A. Saputra, M.D. Gumelar and M.S. Iskandar	39
The Effect of Oligomeric Resins on Tire Traction of SBR/BR-Based Rubber Blends I. Indriasari, S. Sattayanurak, R. Fidyarningsih, A.S. Hidayat, M. Anggaravidya, D.K. Arti, A. Amry, W.T. Utami, I. Idvan, H. Susanto, S. Rahayu, M.D. Gumelar, M.S. Iskandar and L.A. Wisojodharmo	47
Investigation into the Impact of Graphene Oxide (GO) on Microstructural Characteristics in Geopolymer Composites Derived from Fly Ash A. Susanto, A. Haris and M. Saleh	55
The Effect of Graphene Oxide (GO) on Mechanical Properties of Fly Ash-Based Geopolymer-GO Composites A. Susanto, A. Haris and M. Saleh	63

Chapter 3: Nanoparticles Synthesis

Ferrite (Fe) Doping in Strontium Titanate ($\text{SrTi}_{1-x}\text{Fe}_x\text{O}_3$) to Improve Photocatalytic Activity E.K.A. Ardi, Y. Iriani and D. Fasquelle	71
Synthesis of Nanoparticles from Bamboo Charcoal S. Supriyono, N. Ngafwan and W. Wijianto	77
Synthesis of Gold Nanoclusters Encapsulated by Human Serum Albumin and its Application as Glucose Detection Based on Fluorescence Technique B.M. Panjaitan, D. Dwipayana, P.N. Hutnaleontina, T. Nugroho, K.N. Sundari and N.P. Muliawati	85

Chapter 4: Mining and Metallurgical Production

Thermal Beneficiation of a Nickel Laterite Ore from the Obi Island of North Maluku, Indonesia Using Corncob Char as Reductant S. Sufriadin, S. Fauth, P.D. Tindoilo, I. Nur, P. Purwanto, R. Amalia, U.R. Irfan, D.N. Basir and T. Otake	95
--	----

Iron Recovery Technology from Copper Processing Plants

S. Mirzajonova, M. Muratova, U. Rakhmatov, N. Lutfullayeva, G. Beknazarova, Z. Matkarimov and S. Matkarimov

103

Chapter 5: Machines and Equipment

Modification of Drag and Lift Balance at Analog Wind Tunnel for Identification of Aerodynamic Performance

S. Sarjito, B. Junaidin and B. Wijayanto

113

The Role of Thermoelectric Materials in Improving the Performance of a Hybrid Solar Cell System

R. Muhammad, W.T. Ardhana and T.W.B. Riyadi

119

Increased Boiler Efficiency at Power Plant of Paiton Unit 8 with the Addition of a Sootblower to the Superheater Division Panel Area

M.A. Batutah, M. Rosyadi, A.K. Putra and P. Ponidi

125

Wear Failure Analysis of a Steel Bar Used in the Coal Screener

Z. Zulhendra, H. Haryanto, A. Hendrawan, T.W.B. Riyadi and A.D. Anggono

133